

- (54) Title
IMPROVED CHAIR INCORPORATING LUMBAR SUPPORT
- (51)² International Patent Classification(s)
A47C 007/40 A47C 007/46
- (21) Application No. : 72609/87 (22) Application Date : 16.05.86
- (23) Filing Date of Complete Specification : 07.05.87
- (43) Publication Date : 19.11.87
- (44) Publication Date of Accepted Application : 22.06.89
- (60) Related to Provisional(s) : PH5948
- (71) Applicant(s)
STURDY COMPONENTS PTY. LIMITED
- (72) Inventor(s)
FRANK MERVYN CHARLES
- (74) Attorney or Agent
SHELSTON WATERS
- (56) Prior Art Documents
52529/79 A47C 7/46, B60N 1/06
575427 47090/85 B60N 1/06.
572547 32224/84 A47C. 7/46, 17/86
- (57) Claim

1. A chair incorporating a lumbar support in its back, the lumbar support being adjustable to provide a preselected stiffness in the lumbar support region, said lumbar support comprising a resilient support element fixed to and extending between a pair of opposed end supports mounted for adjustable movement towards and away from each other thereby to adjust the stiffness of the lumbar support.

BEST AVAILABLE COPY

COMMONWEALTH OF AUSTRALIA

FORM 10

PATENTS ACT 1952

C O M P L E T E S P E C I F I C A T I O N

FOR OFFICE USE:

Application Number: 7 2 6 0 9 / 8 7
Lodged:

Class

Int. Class

Complete Specification Lodged:
Accepted:
Published:

Priority:

Related Art:

Name of Applicant: STURDY COMPONENTS PTY LIMITED

Address of Applicant: 2 BELMORE ROAD, PUNCHBOWL, NEW SOUTH
WALES, 2196

Actual Inventor: FRANK MERVYN CHARLES

Address for Service: SHELSTON WATERS, 55 Clarence Street, Sydney

Complete Specification for the Invention entitled:

"IMPROVED CHAIR INCORPORATING LUMBAR SUPPORT"

The following statement is a full description of this invention,
including the best method of performing it known to me/us:-

- 1 -

Complete of PH5948 dated 16th May, 1986

The present invention relates to chairs and in particular to the provision of adequate lumbar support to the user.

With ever increasing ergonomic awareness it is becoming progressively more important to provide chairs which offer adequate adjustable support to accommodate variations between users.

10 It is well known that chairs should provide sound support for the lower back or lumbar region. However, in the past, no one has provided a simple adjustable means for achieving this result.

Accordingly, it is an object of the present invention to provide a chair incorporating a lumbar support which is both adjustable and simple to construct and use.

20 According to the invention there is provided a chair incorporating a lumbar support in its back, the lumbar support being adjustable to provide a preselected stiffness in the lumbar support region, said lumbar support comprising a resilient support element fixed to and extending between a pair of opposed end supports mounted for adjustable movement towards and away from each other, thereby to adjust the stiffness of the lumbar support.

Preferably the end supports are adjustably moveable by means of an adjusting shaft extending transversely across the chair back and provided with opposite hand threaded portions for respectively engaging the end supports, the adjusting shaft being provided with handle means external to the chair back for manual adjustment of

the lumbar support stiffness.

Preferably, the end supports are sleeved on a pair of guide rails rigidly attached to the chair back and spaced on either side of and parallel to the adjusting shaft.

A preferred embodiment of the invention will now be described, by way of example only, with reference to the accompanying drawings in which:

Figure 1 is a side elevation of a chair according to the invention;

10 Figure 2 is a cut-away rear perspective view of the chair shown in Figure 1;

Figure 3 is an enlarged section of the lumbar support taken on line 3-3 of Figure 2;

Figure 4 is a view showing the resilient support element and opposed end supports forming part of the chair of Figure 1.

Referring to the drawings, the chair 1 includes a lumbar support region 2 in its back 3. The stiffness of the lumbar support and hence its degree of support is adjustable by means of an adjusting knob 4 mounted on an adjusting shaft 5 extending transversely of the chair back 3.

20 The adjusting means includes a resilient bowed spring element 6 extending between a pair of opposed end supports 7 and 8. The end supports are threadedly engaged with respective opposite hand threaded portions 9 and 10 on the adjusting shaft 5.

The end supports are also sleeved on a pair of

support rails 11 and 12 which are rigidly connected to the chair back 3 by means of end plates 13 and 14. The support rails 11 and 12 are in the form of rods which are parallel with the adjusting shaft 5 and spaced vertically on either side of it.

It will be appreciated that rotation of the knob 4 and hence the adjusting shaft 5 will cause the end supports 7 and 8 to move either towards or away from each other. As this occurs the resilient bowed spring element 6 will adjust the stiffness of the lumbar support region 2 by applying respectively more or less force to the lumbar support region 2. The spring element 6 is preferably in the form of a joined pair of serpentine upholstery springs, as shown in Figure 4.

It will be appreciated that the above described embodiment provides a very simple means of obtaining adjustable lumbar support.

Although the invention has been described with reference to a specific example, it will be appreciated by those skilled in the art that the invention may be embodied in many other forms.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:-

1. A chair incorporating a lumbar support in its back, the lumbar support being adjustable to provide a preselected stiffness in the lumbar support region, said lumbar support comprising a resilient support element fixed to and extending between a pair of opposed end supports mounted for adjustable movement towards and away from each other thereby to adjust the stiffness of the lumbar support.
2. A chair according to claim 1 wherein said end supports are adjustably movable by means of an adjusting shaft extending transversely across the chair back and provided with opposite hand threaded portions for respectively engaging said end supports, said adjusting shaft being provided with handle means external to the chair back for manual adjustment of the lumbar support stiffness.
3. A chair according to claim 2 wherein said end supports are sleeved on a pair of guide rails rigidly attached to the chair back and spaced on either side of and parallel to said adjusting shaft.
4. A chair according to claim 3 wherein said guide rails are in the form of rods which are parallel with the adjusting shaft and spaced vertically on either side of it.
5. A chair according to any one of claims 2 to 4 wherein said handle comprises an adjusting knob.
6. A chair according any one of the preceeding claims wherein said resilient support element comprises a resilient bowed spring.

7. A chair incorporating a lumbar support in its back substantially as herein described with reference to the accompanying drawings.

DATED this 7th day of May, 1987

STURDY COMPONENTS PTY LIMITED

Attorney: WILLIAM S. LLOYD

Fellow Institute of Patent Attorneys of Australia
of SHELSTON WATERS

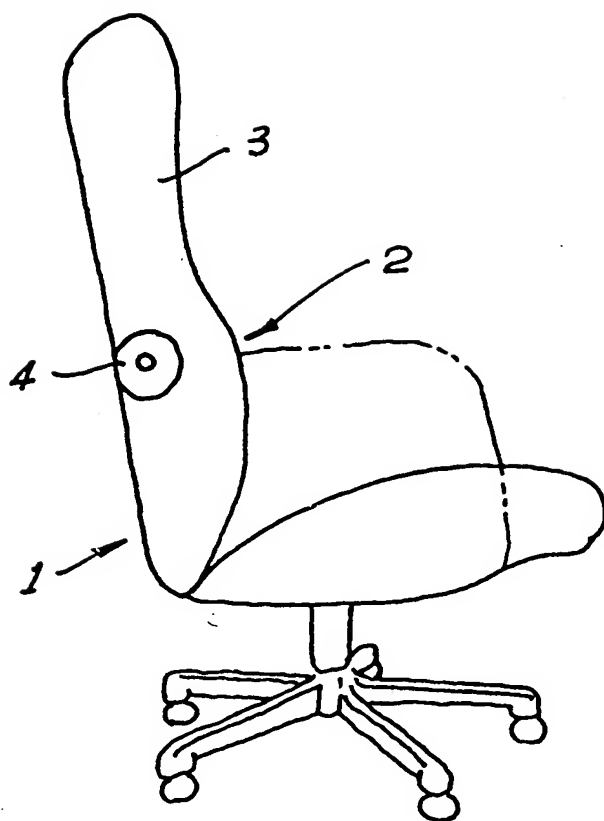


FIG. 1

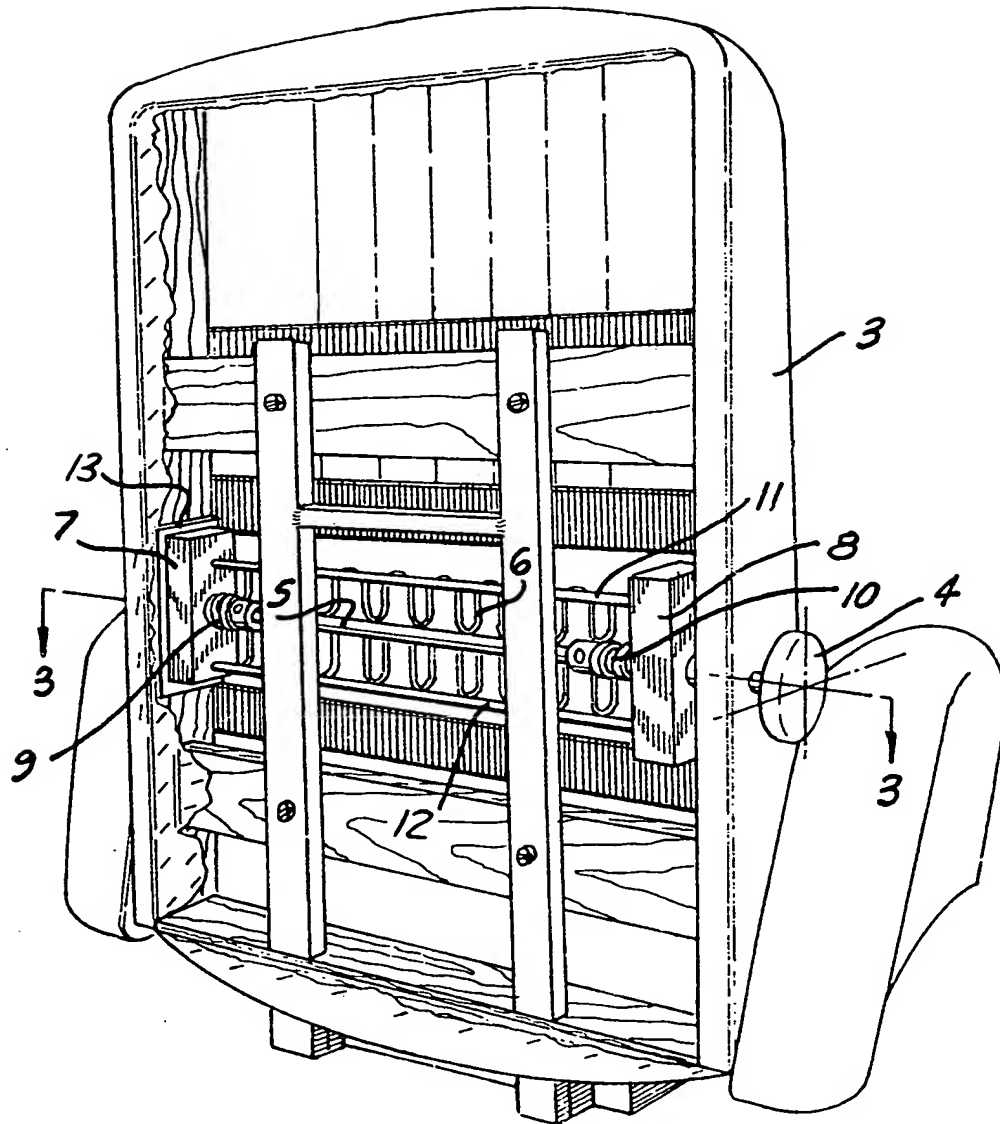
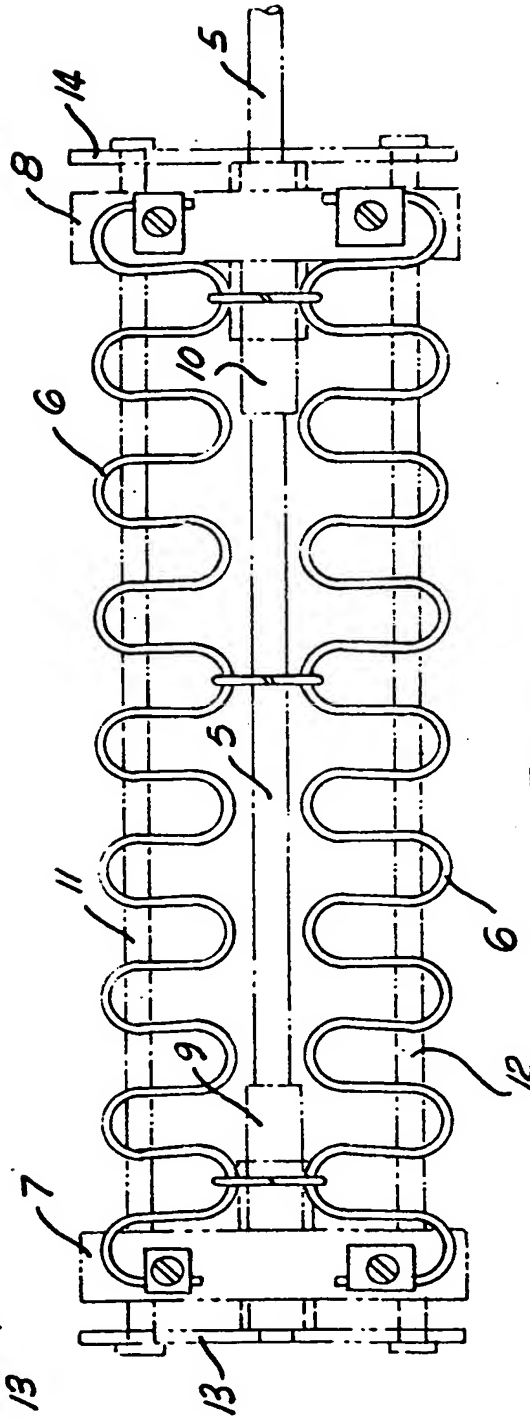
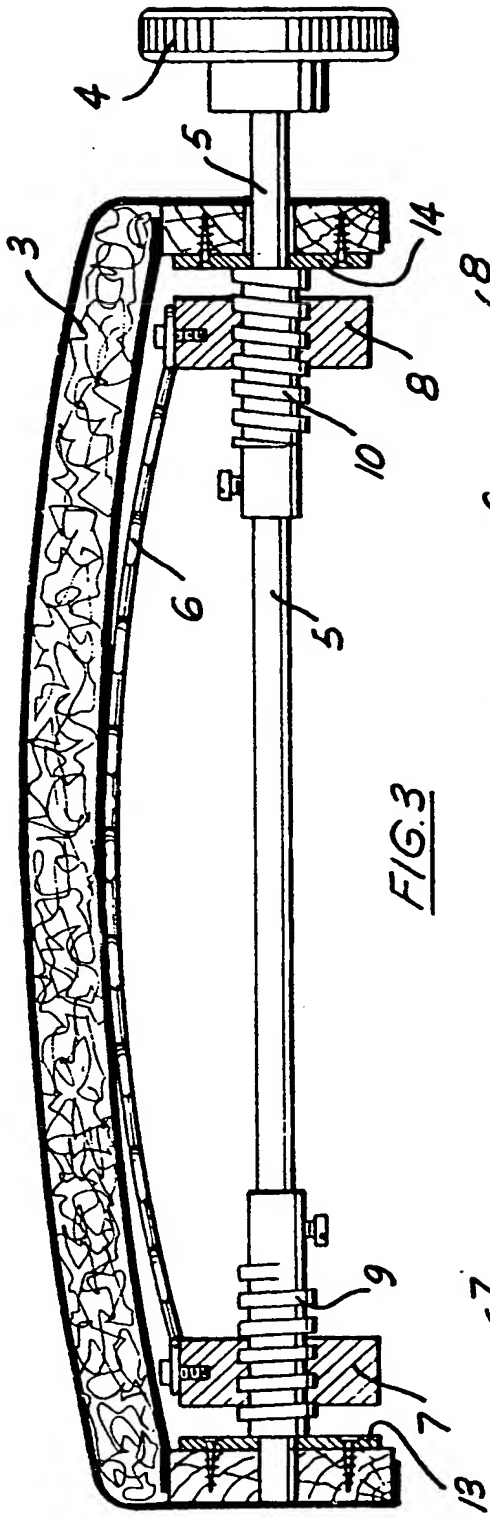


FIG. 2



**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record.**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☐ FADED TEXT OR DRAWING
- ☒ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☐ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☐ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.